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AEC RESEARCH AND DEVELOPMENT REPORT

GROUP 1

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A Facsimile Report

DDC

NOV 8 1966

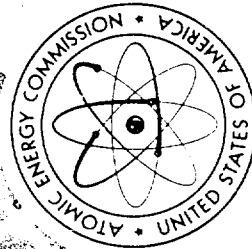
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~~RRV-159~~

BUREAU OF SHIPS GROUP TECHNICAL INSPECTION REPORT

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GROUP 3

Downgraded at 12 year intervals;
Not Automatically Declassified.

U.S.S. RALPH TALBOT (DD390)

TEST BAKER

~~Downgraded at 12 year intervals;
Declassified after 12 years~~

CONFIDENTIAL
Secret

Classification (Cancelled) (Changed to
by Authority of JOINT CHIEFS OF STAFF JCS 1750/30 DATED 10 APRIL 1952
By *Jha H. Byrd* USAF Date MAY 16 1952

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OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

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ENERGY ACT 1946

REG. NO. *W*

⑥ Operation Crossroads.

U.S.S. Ralph Talbot (DD 390)

Test Baker [4] 48

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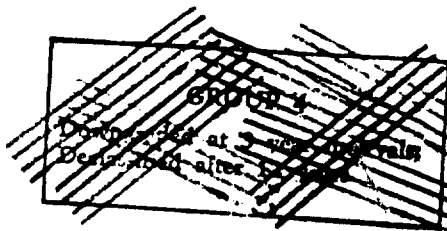
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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT.

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⑪ 1946

⑫ 25p.

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Classification (Cancelled) (Changed to _____)
By Authority of JOINT CHIEFS OF STAFF JCS 1795/38 DATED 15 APRIL 1961
By *John H. Ryle* USAF Date MAY 16 1960

APPROVED:

F.X. Forest,
Captain, U.S.N.

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~~RESTRICTED DATA~~

ATOMIC ENERGY ACT 1946
USS RALPH TALBOT (DD390)

Page 1 of 34 Pages

(193600) ⑭ XRD-99

(DD 390)

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USS RALPH T. ALBOTT (DD390)

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U.S.S. RALPH TALBOT (DD 390)

SHIP CHARACTERISTICS

Building Yard: Boston Naval Shipyard.

Commissioned: 14 October 1937.

HULL

Length Overall: 341 feet 4 inches.

Length on Waterline: 334 feet 0 inches.

Beam (extreme) 35 feet 6 inches.

Depth (molded at side, to main deck, amidships):
19 feet 7 7/8 inches.

Drafts at time of test: Fwd. 11 feet 6 inches.

Aft. 12 feet 3 inches.

Standard displacement: 1,500 tons.

Displacement at time of test: 2,018 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of G.E. Turbines are installed in ship. One set per shaft.

Reduction Gears: Two sets of double reduction are installed, one per turbine set.

Main Condensers: Two are installed in ship.

Boilers: Four boilers are installed in ship, Type: Babcock and Wilcox and Foster Wheeler. 400 psi - guage - 700° F.

Propellers: Two are installed.

Main Shafts: Two are installed.

Ships Service Generators: Four are installed in ship.

Two 132 K.W. - A.C. sets, and two 40 K.W. D.C. sets.

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By John N. Myrtle Date MAY 16 1952

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USS RALPH TALBOT (DD 390)

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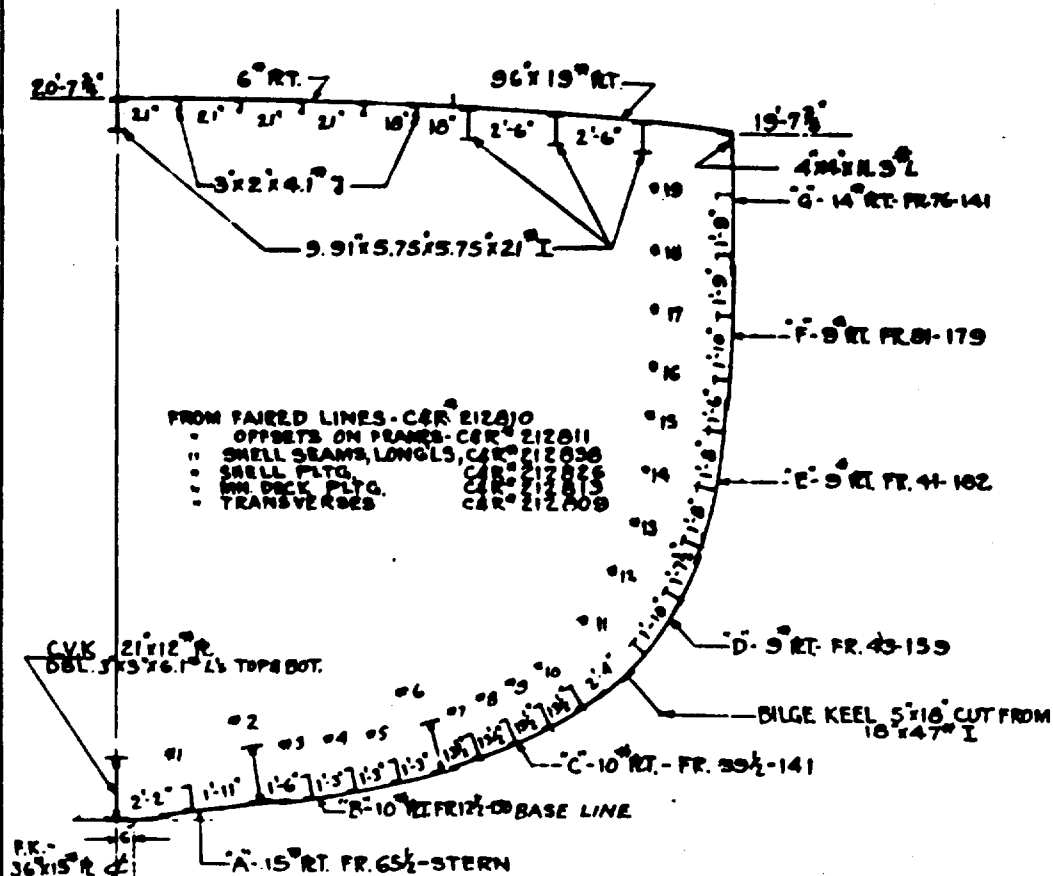
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ATOMIC ENERGY ACT 1946

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LONG L 1-9x2 1/2 x 13.4 C
 " 2-19x7 RT 3x2 1/4 PL
 " 3-4-5-8x2 1/2 x 11.5 C
 " 6-17x7 RT 3x2 1/4 x 4.1 PL
 " 7-8-9-10-8x2 1/2 x 11.5 C
 " 11-12-13-14-5x2.06 x 5.87 TS
 " 15-16-17-3x2.69 x 4.48 TS
 " 18-19-3x1 1/2 x 14x6.7 C

7.65° WEB SPCL-7'0"
 KEEL BKT. SPCL- EVERY FRAME



MIDSHIP SECTION FR.96 TEST B

USS RALPH TALBOT (DD390)

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Conditions after Test.

(a) Drafts after test, general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. When the ship was inspected two weeks after the test, normal leakage was observed in the engine room and sound room.

(b) Structural damage.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

Not observed.

(c) Other damage.

HULL

Not observed.

MACHINERY

None, as far as can be determined by visual inspection.

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USS RALPH TALBOT (DD390)

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ELECTRICAL

Test B. There was no damage to electrical equipment from

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

No effects noted.

MACHINERY

No evidence.

ELECTRICAL

No evidence of heat observed.

(b) Fires and explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No fires or explosions.

(c) Shock.

HULL

None.

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USS RALPH TALBOT (DD390)

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MACHINERY

No evidence.

ELECTRICAL

No evidence of shock observed.

(d) Pressure,

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No evidence of pressure observed.

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No effects peculiar to the atom bomb were noted.

~~SECRET~~

USS RALPH TALBOT (DD390)

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

HULL

Not observed.

MACHINERY

None, except for possible effects of radioactivity, insofar as could be determined by visual inspection. No machinery on this vessel was operated or opened for interior inspection after Test B because of radioactivity, which was high when the ship was inspected 15 days after the test.

ELECTRICAL

No effect.

(b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No effect.

(c) Effect on watertight integrity and stability.

HULL

None.

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USS RALPH TALBOT (DD390)

MACHINERY

No comment.

ELECTRICAL

No effect from any electrical damage.

(d) Effects on personnel and habitability.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No effect on habitability from electrical damage.

(e) Effect on fighting efficiency.

HULL

Except for the effects of radioactivity, the fighting efficiency of the ship is not affected.

MACHINERY

None, except for radioactivity.

ELECTRICAL

No effect.

~~SECRET~~

USS RALPH TALBOT (DD390)

IV. General Summary of Observers' Impressions and Conclusions.

HULL

None.

MACHINERY

The RALPH TALBOT was outside the effective range of the explosion in Test B, as far as physical damage to machinery is concerned.

ELECTRICAL

As there was no damage from Test B, no conclusions were formed by the observers.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

No recommendations.

SECRET

USS RALPH TALBOT (DD390)

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. When the ship was inspected two weeks after the test, normal leakage was observed in the engine room and sound room.

(b) Structural damage.

None.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No effects noted.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

None.

SECRET

USS RALPH TALBOT (DD390)

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

Except for the effects of radioactivity, the fighting efficiency of the ship is not affected.

IV. General Summary of Observers' Impressions and Conclusions.

None.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

SECRET

USS RALPH TALBOT (DD390)

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Fuel Oil	Min.
Diesel Oil	Min.
Ammunition	10%
Potable and reserve feed water	95%
Salt water ballast	350 tons

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the Ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Direction of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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USS RALPH TALBOT (DD390)

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

There is no apparent hull damage. Minor normal leakage was noted in the engine room and sound room. Draft readings and list prior to and following the blast were the same. General views of the ship are on pages 29 to 32 .

B. Superstructure.

There is no apparent damage to the superstructure.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

No damage.

E. Weather Deck.

No damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not Applicable.

SECRET

USS RALPH TALBOT (DD390)

I. Interior Compartments (below w.l.).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

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USS RALPH TALBOT (DD390)

S. **Miscellaneous.**

No comment.

SECRET

USS RALPH TALBOT (DD390)

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None, as far as can be determined by visual inspection.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None, except radioactivity.

SECRET

USS RALPH TALBOT (DD390)

III. Effects of Damage.

(a) Effect on machinery and ship control.

None, except for possible effects of radioactivity, insofar as could be determined by visual inspection. No machinery on this vessel was operated or opened for interior inspection after Test B because of radioactivity, which was high when the ship was inspected 15 days after the test.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except radioactivity.

(e) Total effect on fighting efficiency.

None, except for radioactivity.

IV. General Summary.

The RALPH TALBOT was outside the effective range of the explosion in Test B, as far as physical damage to machinery is concerned.

V. Preliminary Recommendations.

None.

SECRET

USS RALPH TALBOT (DD380)

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery of this vessel was not changed by Test B, as far as could be determined by visual inspection.

(b) Areas of major damage.

There was no major damage.

(c) Primary cause of damage in each area of major damage.

Not Applicable.

(d) Effect of target test on overall operation of machinery plant.

Test B had, insofar as could be determined by visual inspection, no effect on the overall operation of the machinery plant.

NOTE: No machinery on this vessel was tested or operated after Test B.

B. Boilers.

There is no evidence of damage to the boilers, stack, or uptakes, insofar as could be determined by visual inspection.

C. Blowers.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

SECRET

USS RALPH TALBOT (DD390)

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Propulsion Machinery.

The engines were trammed and found to still be in alignment. There was no apparent damage sustained as a result of the test.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

No apparent damage.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbines and Gears).

No apparent damage.

M. Propellers.

The propellers were not visible from the surface of water and were not inspected. Considering the lack of damage to the ship as a whole they are believed to be undamaged.

SECRET

USS RALPH TALBOT (DD390)

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N. Distilling Plant.

No apparent damage

O. Refrigeration Plant.

No apparent damage.

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

The diesel generator was inoperative prior to the test. The engine was examined and found to have sustained no apparent damage from Test B.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

SECRET

USS RALPH TALBOT (DD390)

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test, list, general areas of flooding sources.

Not observed.

(b) Structural damage.

Not observed.

(c) Damage.

There was no damage to electrical equipment from test Baker.

II. Forces Evident and Effects Noted:

(a) Heat.

No evidence of heat observed.

(b) Fires and explosions.

No fires or explosions.

(c) Shock.

No evidence of shock observed.

(d) Pressure.

No evidence of pressure observed.

SECRET

USS RALPH TALBOT (DD390)

(e) Any effects apparently peculiar to the atom bomb.

No effects peculiar to the atom bomb were noted.

III. Effects of Damage.

(a) Effect on electrical equipment and ship control.

No effect.

(b) Effect on gunnery and fire control.

No effect.

(c) Effect on watertight integrity and stability.

No effect from any electrical damage.

(d) Effect on personnel and habitability.

No effect on habitability from electrical damage.

(e) Total effect on fighting efficiency.

No effect.

IV. General Summary of Observers Impressions and Conclusions.

As there was no damage from test Baker, no conclusions were formed by the observers.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

No recommendations.

SECRET

USS RALPH TALBOT (DD390)

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall Condition.

The overall condition of the vessel was unchanged.

(b) Areas of Major damage.

No damage.

(c) Primary causes of damage in each area of major damage.

No damage was sustained from test B.

(d) The effects of target test on overall operation of the electric plant.

1. Ship's service generators - not affected.
2. Engine and boiler auxiliaries - not affected.
3. Electric propulsion - not applicable.
4. Communications - not affected.
5. Fire control circuits - not affected.
6. Ventilation - not effected.
7. Lighting - not effected.

(e) Types of equipment most effected.

SECRET

USS RALPH TALBOT (DD390)

No electrical equipment damaged from test B.

B. Electric Propulsion Rotating Equipment.

Not applicable.

C. Electric Propulsion control Equipment.

Not applicable.

D. Ship's Service Generators.

Not damaged.

E. Emergency Generators.

Not damaged.

F. Switchboards and Distribution Panels.

Not damaged.

G. Wiring, Wiring Equipment and Wireways.

Not damaged.

H. Transformers.

Not damaged.

I. Submarine Propelling Batteries.

Not applicable.

J. Portable Batteries.

Not damaged.

K. Motors, Motor-Generator sets and Motor Controllers.

SECRET

USS RALPH TALBOT (DD390)

Not damaged.

L. Lighting Equipment.

Not damaged.

M. Searchlights.

Not damaged.

N. Degaussing Equipment.

Not damaged.

O. Gyro Compass Equipment.

Not damaged.

P. Sound Powered Telephones.

Not damaged.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

Not damaged.

S. Telegraphs.

Not damaged.

T. Indicating Systems.

Not damaged.

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USS RALPH TALBOT (DD390)

U. I.C. and A.C.O. Switchboards.

Not damaged.

V. F.C. Switchboards.

Not damaged.

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USS RALPH TALBOT (DD390)

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SECTION IV

PHOTOGRAPHS

TEST BAKER

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USS RALPH TALBOT (DD390)

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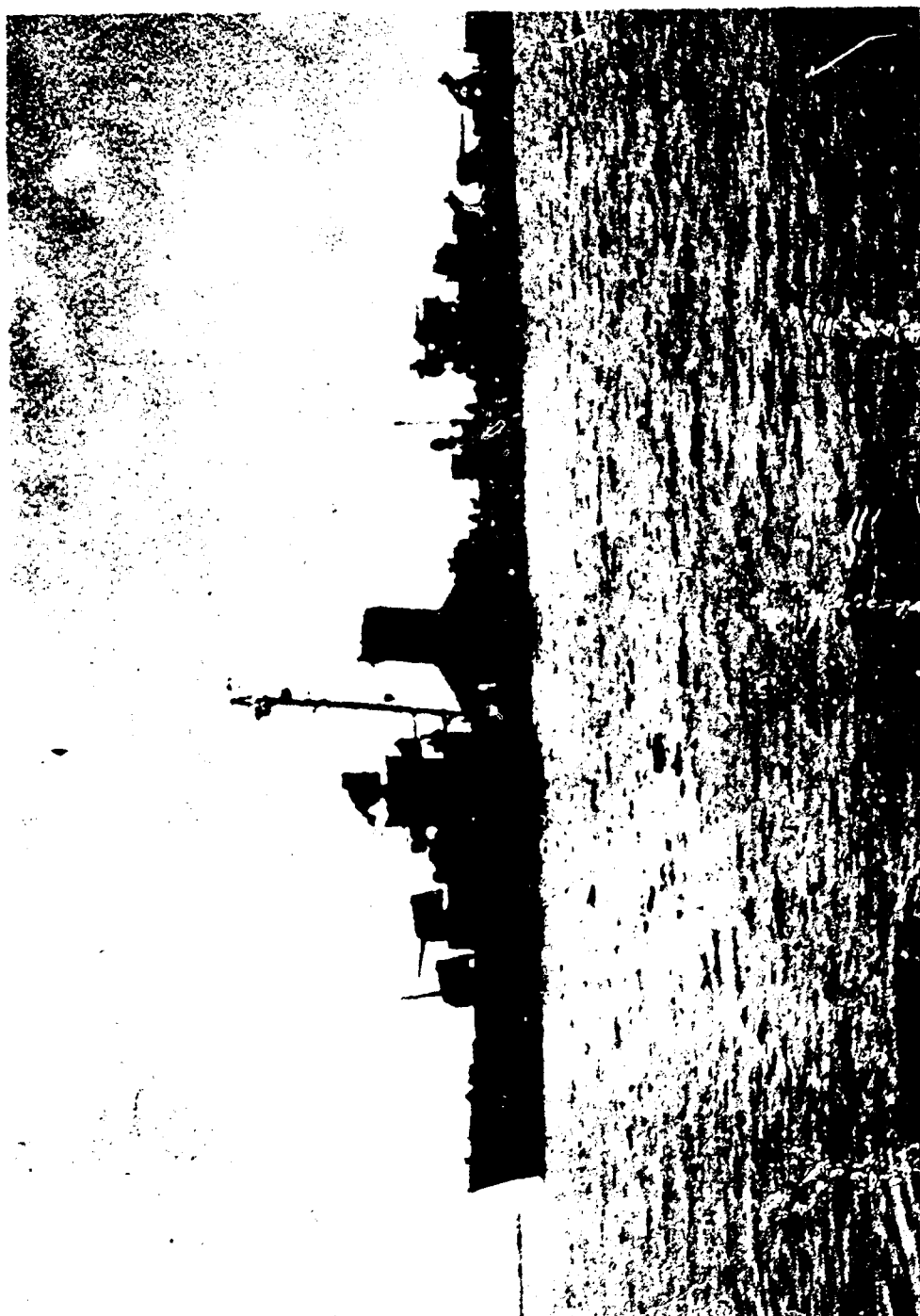
BB-CR-227-513-52. Port beam before Test B.

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USS RALPH TALBOT (DD390)

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AB-CR-227-243-17. Port beam after Test B.

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USS RALPH TALBOT (DD399)

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BB-CR-227-513-48. Starboard beam before Test B.

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USS RALPH TALBOT (DD390)

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AB-CR-227-243-24. Starboard beam after Test B.

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USS RALPH TALBOT (DD390)

8045

APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

SECRET

USS RALPH TALBOT (DD390)

Page 33 of 34 Pages

COMMANDING OFFICERS REPORT

REPORT # 5

On 5 August 1946 the Commanding Officer and working party assisted ATF 100 in spraying the RALPH TALBOT with decontamination compound. After removal of compound it was found that radioactivity had been reduced about 20% in areas where readings were over 1.2R/day. Areas which read less than .9 R/day were affected very little.

At 0900 on 9 August 1946, the Commanding Officer reboarded the RALPH TALBOT with Department heads, key ratings, and a DSM team for a quick inspection of the entire ship. Topside areas were monitored and found to average about five hours tolerance. Engineering spaces, clear of the hull, were safe. The firerooms had seven to twelve hour tolerances, and the superstructure decks showed an average of two hour tolerance.

There was no flooding in any space, and no change in draft since the last check on B minus one day. The ship was on an even keel, and no visible damage of any type was noted. No power was available to test equipment electrically but all units operated normally in manual.

All ammunition topside and below decks was intact. Depth charges were undamaged. There was no evidence of fire, heat, or explosions on board, and no evidence of wave or water damage.

All electrical circuits, fresh water lines, fuel systems, and tanks were intact. Boilers suffered no damage. The shock wave had no visible effect on the underwater hull; and all plating, frames, and bulkheads appear intact.

Except for the persistence of radioactivity topside and on the skin of the ship, the RALPH TALBOT suffered no damage as a result of the B Test.

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USS RALPH TALBOT(LD390)

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Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

/✓AD-3665884	XRD-203-Section 12✓
x ——— AD-366589✓	XRD-200-Section 9✓ <i>reinst</i>
AD-366590✓	XRD-204-Section 13✓
AD-366591✓	XRD-183✓
* ——— /✓AD-366586x	XRD-201-Section 10✓ <i>reinst</i>
✓✓AD-367487✓	XRD-131-Volume 2✓
✓✓AD-3675164	XRD-143✓
✓✓AD-367493✓	XRD-142✓
AD-801410L✓	XRD-138✓
AD-376831L✓	XRD-83✓
AD-366759✓	XRD-80✓
✓✓AD-376830L✓	XRD-79✓
/✓AD-376828L✓	XRD-76✓
✓✓AD-367464x	XRD-106✓
AD-801404L✓	XRD-105-Volume 1✓
/✓AD-367459x	XRD-100✓

TRC

18 April 1997

Subject: Declassification of Report

AD-376836L ✓	XRD-98 ✓
AD-376835L ✓	XRD-97 ✓
AD-376834L ✓	XRD-96 ✓
AD-376833L ✓	XRD-95 ✓
* AD-376832L ✓	XRD-94 ✓ <i>re-ingest</i>
✓ ✓ AD-367458 ✓	XRD-93 ✓
AD-367457 ✓	XRD-92-Volume 2 ✓
AD-367456 ✓	XRD-91-Volume 1 ✓
AD-367455 ✓	XRD-90 ✓
AD-367454 ✓	XRD-89 ✓
AD-367453 ✓	XRD-88 ✓
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✓ ✓ AD-367463 ✗	XRD-104 ✓
✓ ✓ AD-367461 ✗	XRD-102 ✓
AD-367460 ✓	XRD-101 ✓

TRC

18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114✓

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Arldith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center